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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,038	01/15/2004	Tei-Fu Chen	B-4835 620337-1	8786

7590 09/29/2005

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EXAMINER

SAVAGE, MATTHEW O

ART UNIT PAPER NUMBER

1724

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/760,038

Applicant(s)

CHEN, TEI-FU

Examiner

Matthew O. Savage

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 1-14 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15, 16 and 18-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Applicant's election with traverse of the method (group II) and the species shown in FIG. 1 (species 2) in the reply filed on 7-7-05 is acknowledged. The traversal is on the ground(s): that the examiner offers no support obtained from the instant specification or prior art for the assertion that the claimed device could be used to disinfect a gas; the election of species requirement is improper since all of the claims are generic. This is not found persuasive because: support from the instant specification or prior art is not required in formulating material differences for restriction purposes (see M.P.E.P. 806.05(e); all of the claims are not generic (claim 16 reads on species 2 of which is shown in FIG. 1). The election of species requirement concerning genus 2- genus 3 set forth on page 3 of the election requirement has been withdrawn. Accordingly, claims 15, 16, and 18-28 will be examined and claims 1-14, and 17 withdrawn as being directed to non-elected inventions.

The requirement is still deemed proper and is therefore made FINAL.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 24-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Concerning claims 24-26, it is unclear by the phrase "selected from the group comprised of" as to whether or not a Markush group format is desired. It is suggested

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that "comprised" be changed to "consisting"—in the case that a Markush group format is desired.

On line 2 of claim 5, "the double filter" lacks antecedent basis.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 16, 18, 19, and 23-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Mortensen.

With respect to claim 15, Mortensen discloses a method of purifying a liquid stream (see FIG. 1) including passing the liquid stream through a filter 11 to remove impurities therefrom, and exposing the liquid stream to a radiation 13 to radiate the liquid stream.

As to claim 16, Mortensen discloses the liquid stream as being exposed to the radiation source after passing through the filter.

Regarding claim 18, Mortensen discloses the radiation source as emitting ultraviolet radiation (see lines 57-59 of col. 1).

Concerning claim 19, Mortensen discloses the radiation source as including an ultraviolet lamp 40 (see FIG. 3).

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As to claim 23, Mortensen discloses an inner filter 53 to pass the liquid stream therethrough, and an outer filter 51 surrounding the inner filter to pass the liquid stream therethrough and in fluid communication with the inner filter.

Concerning claim 24, Mortensen discloses the inner filter 53 as comprising a carbon filter 52 (e.g., an activated charcoal layer, see lines 40-43 of col. 2).

Regarding claim 25, Mortensen discloses the double filter as being formed with an outer layer 51 comprising activated carbon (e.g., activated charcoal).

Regarding claim 26, Mortensen discloses the filter as comprising fiber filters 51, 53, and a carbon filter 52.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mortensen in view of Matschke.

With respect to claim 20, Mortensen fails to specify a reflector disposed to reflect the radiation passing through the fluid stream back into the fluid. Matschke discloses the concept of providing a reflector (e.g., the chamber walls) disposed to reflect radiation (from bulb 14, see FIG. 2) passing through a fluid stream (contained within helical tube 3) back into the fluid and teaches that such an arrangement prevents loss of UV radiation due to absorption by the chamber walls (e.g., the UV irradiation reflective walls

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forming chamber 1, see lines 24-54 of col. 3). It would have been obvious to have modified the method of Mortensen so as to have included a reflector in the form of UV irradiation reflective walls as suggested by Matschke in order to optimize the efficiency of transfer of UV irradiation to the fluid by minimizing absorption of UV radiation by the chamber walls.

Concerning claim 21, Mortensen discloses a spiral tube 14 located to pass fluid therethrough and between the ultraviolet lamp and the reflector (see FIG. 2).

Regarding claim 22, Mortensen discloses the spiral tube 14 as being arranged to surround the ultraviolet lamp and the reflector being arranged to surround the spiral tube (see FIG. 2).

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mortensen in view of Conway et al.

Mortensen fails to specify the step of passing the fluid stream through an oxygenation device to mix oxygen into the liquid. Conway et al disclose a method of purifying liquid (e.g., water), which includes filtering 12, 14, 15, followed by UV treatment 16, followed by passing the fluid through an oxygenation device to mix oxygen into the liquid (e.g., via ozone treatment 17). Conway et al teaches that the oxygenation treatment step further removes organics and microorganisms from the water (see lines 45-55 of col. 2). It would have been obvious to have modified the method of Mortensen et al so as to have included the oxygenation treatment step as

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suggested by Conway et al in order to further remove organics and microorganisms from the water.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mortensen in view of Conway et al as applied to claim 27 above, and further in view of Lee et al.

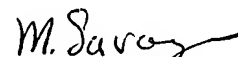
Mortensen and Conway et al fail to specify one or more molecular sieves to extract oxygen from the air by pressure swing absorption. Lee et al disclose one or more molecular sieves 9, 10 to extract the oxygen from air by pressure swing adsorption and suggests that such an arrangement provides up oxygen enriched gas up to 95% oxygen for treating water. It would have been obvious to have modified the combination of Mortensen and Conway et al so as to have included the molecular sieves as suggested by Lee et al in order to provide oxygen enriched gas for treating the water thereby improving the efficiency of the oxygenation treatment step.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O. Savage whose telephone number is (571) 272-1146. The examiner can normally be reached on Monday-Friday, 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Matthew O Savage
Primary Examiner
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